AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for evaluating, during a welding process, a welded joint as the welded joint ~~it~~ is forming between at least two parts of a joint using at least one ultrasonic transmitter penetrating a ~~the~~ region of the forming welded joint with ultrasonic waves and at least one ultrasonic receiver, which registers the changes in sound transmittance of the ultrasonic waves penetrating the region of the forming welded joint in order to evaluate the welded joint, wherein sound is transmitted with longitudinal (l) and transverse(t) ultrasonic waves into the region of the welded joint, the time-dependent changes in sound transmittance $D_l(t)$, $D_t(t)$ of the longitudinal ultrasonic waves (l) and the transverse ultrasonic waves (t) are registered separately, and using a ~~the~~ ratio of $D_l(t)$ to $D_t(t)$, the time point t_s at which a molten mass forms in the region of the welded joint is determined and which serves as a basis for evaluating the welded joint.

2. (Currently Amended) The method according to claim 1, wherein the time point t_s at which a molten mass forms in the region of the welded joint between the parts of the joint is determined by a ~~the~~ time point of the time-dependent ratio function of $D_l(t)$ to $D_t(t)$, at which the ratio function indicates a big leap in rising, is determined.

3. (Previously Presented) The method according to claim 1, wherein the at least one ultrasonic transmitter transmits ultrasonic waves into a first part of a joint via a contact area and the at least one ultrasonic receiver registers ultrasonic waves transmitted into the region of the welded joint via a contact area of a second part of the joint, the following time-dependent ratio function is utilized to evaluate the welded joint:

$$\frac{D_l(t)}{D_t(t)} = \frac{(EB)_l(t)\cdot(BB)_l(t)\cdot(BI)_l(t)\cdot(BE)_l(t)}{(EB)_t(t)\cdot(BB)_t(t)\cdot(BI)_t(t)\cdot(BE)_t(t)} \approx \frac{(EB)_l^2(t)\cdot(BB)_l(t)}{(EB)_t^2(t)\cdot(BB)_t(t)} \approx \frac{(BB)_l(t)}{(BB)_t(t)}$$

with $(EB)_{l\,or\,t}(t) \equiv$ sound transmittance of longitudinal waves or transverse waves at the sound coupling - in area on the first part of a joint

$(BB)_{l\,or\,t}(t) \equiv$ sound transmittance of longitudinal waves or transverse waves at the contact between the parts of a joint

$(BI)_{l\,or\,t}(t) \equiv$ sound transmittance of longitudinal waves or transverse waves inside the parts of a joint

$(BE)_{l\,or\,t}(t) \equiv$ sound transmittance of longitudinal waves or transverse waves at the sound couplingout area on the second part of a joint

with $(BI)^2_{l\,or\,t}(t)$ and $(EB)^2_{l\,or\,t}(t)$ of the longitudinal waves and the transverse waves being largely the same provided that frequencies are low and the transmission paths are short.

4. (Original) The method according to claim 3, wherein the evaluation of the welded joint is based on the size of the forming molten mass which is determined from the degree of difference in the rise of the ratio function at the time point t_s.

5. (Previously Presented) The method according to claim 1,

wherein the welding is conducted as part of a resistance welding process in which contact electrodes are placed on the parts of the joint, the contact electrodes forming contact areas with the parts of the joint via which the ultrasonic waves are coupled in, respectively coupled out.

6. (Previously Presented) The method according to claim 1, wherein the welding process is conducted as part of a noncontact welding process in which the ultrasonic transmitter and the ultrasonic receiver are brought in direct contact with the respective part of the joint.

7. (Original) The method according to claim 6, wherein laser beam, electron beam or ion beam welding is used as the noncontact welding process.

8. (Previously Presented) The method according to claim 1, wherein piezoelement probes or EMUS probes are used as the ultrasonic transmitter and the ultrasonic receiver.

9. (Previously Presented) The method according to claim 1, wherein standard values are generated by means of an online evaluation of the forming welded joint which influence the welding process.